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| **NWS FORM E-5** (11-88) **(PRES. by NWS Instruction 10-924)** **U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE** | HYDROLOGIC SERVICE AREA (HSA) **WFO Jackson, Mississippi** |
| **MONTHLY REPORT OF HYDROLOGIC CONDITIONS** | REPORT FOR: MONTH **January** YEAR **2017** |
| TO: Hydrometeorological Information Center, W/OH2<br>NOAA / National Weather Service<br>1325 East West Highway, Room 7230<br>Silver Spring, MD 20910-3283 | SIGNATURE **Bill Parker, Meteorologist In-Charge**<br>DATE **02/22/2017** |

*When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)*

☐ **An X inside this box indicates that no river flooding occurred within this Hydrologic Service Area.**

## Synopsis…

Even with an Arctic outbreak during the first week, the month of January average temperature was well above normal. Most of our climate sites had temperatures from 8 to 10 degrees above normal. There was a range from 8.6 degrees above at Greenwood-Leflore to 10.3 degrees above at Meridian. Tallulah-Vicksburg and Greenwood-Leflore had their 3rd warmest January on record. All other sites were in the top 7 warmest Januarys. The dividing line between above normal and normal to below normal rainfall was along the Natchez trace. To the South of the Trace, rainfall ranged from 110 to 200 percent of normal. North of the Trace, most areas only received rainfall ranging from 50 to 90 percent of normal. There were some exceptions, around the Metro Jackson area and along a line from Morehouse Parish to Ashley/Chicot Counties in Arkansas to Leflore and Sunflower Counties in Mississippi, rainfall ranged from 100 to 110 percent of normal. The driest areas in the Hydrologic Service Area (HSA), Golden Triangle and Tensas and Madison Parishes, continued the dry trend with rainfall from 50 to 75 percent.

## Weather Highlights…

The month began with a stationary front draped across southern portions of the HSA. By the 2nd, a warm front was across Northeast Louisiana into North Central Mississippi. A fast moving upper level disturbance in the southern Plains helped a storm system to develop early in the day. As the disturbance moved closer to the HSA in the mid morning hours, a strong surface low and fast moving cold front helped a strong bowing squall line to develop across Central Louisiana. This line began racing eastward and began to intensify south of the warm front during the early afternoon hours to areas along and south of I-20. This squall line brought widespread damaging winds and tornadoes to this region between 1 and 4 pm. A total of 8 tornadoes developed along the leading edge of the line. 2 EF0s, 5 EF1s and 1 EF2 tornado were surveyed. The EF2 occurred over northern Covington County in Mt. Olive. No injuries or fatalities occurred with the line and associated tornadoes. By 4pm, most storms had moved through the region. The cold front and drier air finally moved through the entire region by early on the 3rd. Rainfall ranged from ¾" to 4" across the region.

A reinforcing cold front pushed through the area during the afternoon to early evening hours of Tuesday the 3rd. On Wednesday and Thursday, strong high pressure with cooler temperatures began to filter into the ARKLAMISS Region. The strongest push of strong high pressure and colder air began to move in on the 6th, Friday morning. A strong upper level disturbance began to move east early Friday. As the disturbance approached, moisture began to overrun the shallow Arctic Air mass at the surface. With surface temperatures at or below freezing, sleet began falling during the early morning hours on Friday across Northeast Louisiana and spread north and eastward during the late morning into the late afternoon hours. There was significant sleet and freezing rain accumulation, especially from Franklin Parish in Louisiana, southeast toward Adams County in Mississippi, over to Warren County in Mississippi, throughout the Jackson Metro area and east along I-20 towards Lauderdale County and as far north as Noxubee County. Freezing rain and sleet

accumulations from ½" to 1" were observed. Some areas in east-northeast Mississippi had enough precipitation when atmospheric temperatures began cooling to allow for a brief change over to snow. Most precipitation ended late in the evening leaving frigid, icy conditions as a 1040 high strengthened through the region from Friday through Sunday. Clearing skies brought hard freeze conditions during this time period. Temperatures across portions of the Mississippi Delta stayed below freezing for over 60 hours.

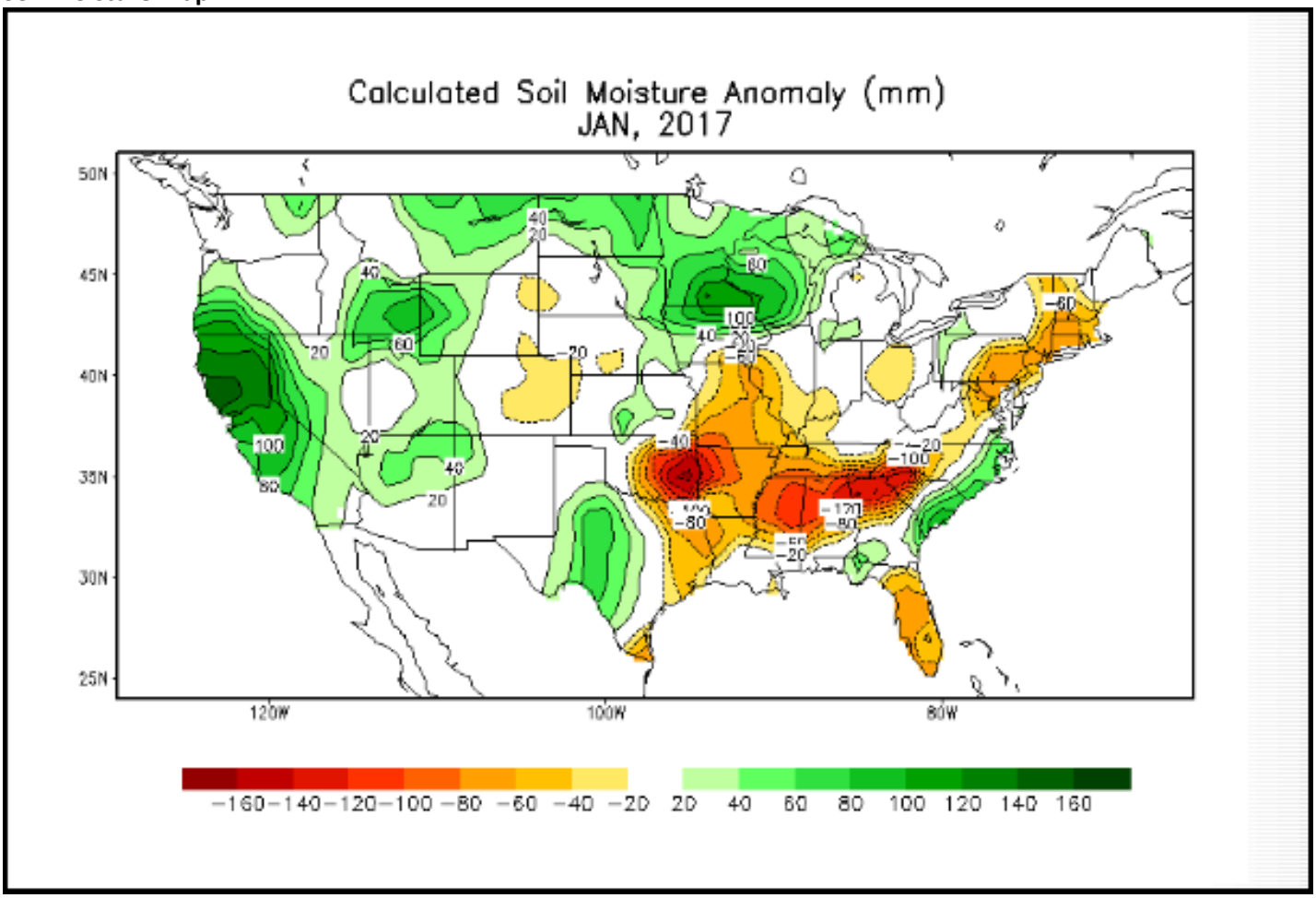
High pressure shifted east and allowed a substantial warm up from the 9th through the 11th. On the 12th, a cold front once again pushed southeastward towards the ARKLAMISS Region. An upper level ridge across the Southeast U.S. prevented the front from moving any further south than Central Mississippi and Northeast Louisiana by the 14th. By the morning of the 15th, an upper level low over northern Mexico began to move to the northeast. The front across the central portion of the HSA began moving to the north as a warm front on the 16th. On the 17th, as warm, moist air continued to push into the region, a cold front slowly moved in the HSA as a trough in the Southwest U.S. continued to deepen. The front stalled on the 18th as a low developed in the Northwest Gulf of Mexico. The surface low moved northeast across the HSA on the 19th bringing heavy rainfall to much of the HSA. The heaviest rainfall amounts were reported across Southwest Mississippi where 5+ inches was reported. An EF-2 tornado touched down in Simpson and Smith Counties during the morning hours.

By the 20th, another front was pushing across Texas towards the ARKLAMISS Region. A squall line developed across the south early on the 21st. Ahead of this line, supercell thunderstorms broke out ahead of the line producing large hail and an early morning EF-3 tornado that tracked through Lamar and Forrest Counties, killing 4 people in Hattiesburg and injuring over 50 others. Heavy rainfall with some of these storms produced flash flooding in parts Forrest, Marion, Jones, and Jefferson Counties. Another fast moving cold front pushed into the area during the late afternoon and evening hours. Storms developed producing large hail from Central Louisiana through Central and South Mississippi. The Largest hail, 3.5", was reported in Catahoula Parish. An EF-0 and EF-1 tornadoes touched down in Ashley County, AR and Morehouse Parish, LA, respectively. An EF-2 tornado also touched down in Lauderdale County injuring one person. On the 22nd, a closed upper low moved across the HSA bringing another round of light to moderate rainfall. From the 17thuntil the 23rd, rainfall ranged from 1.5" to over 6".

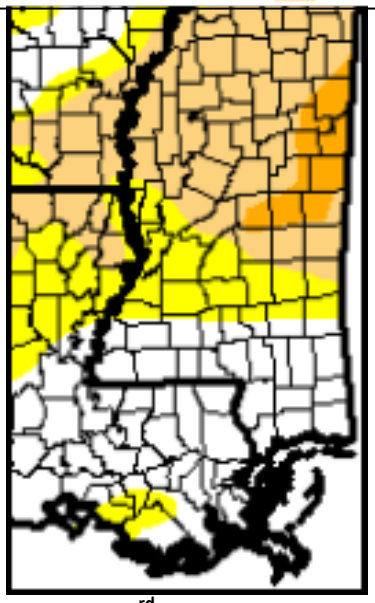
High pressure began to build into region on the 23rd and 24th. Another cold front pushed across the area on the 25th bringing around an inch of rainfall to South Mississippi and less than ¼" elsewhere. High pressure built into the region bringing cooler and drier conditions to the area through the 30th. Skies remained clear with moderating temperatures on the 31st.

## River and Soil Conditions

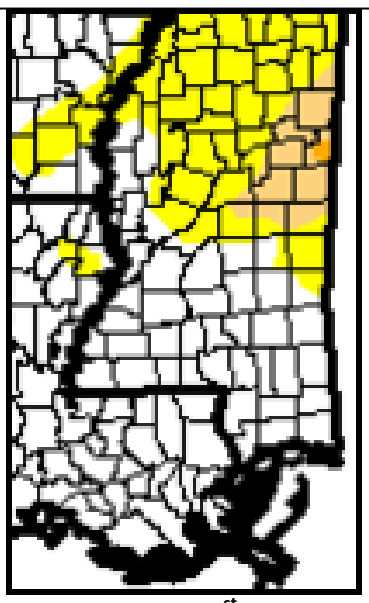
**Soil Moisture Map:**



**Drought Comparison:**

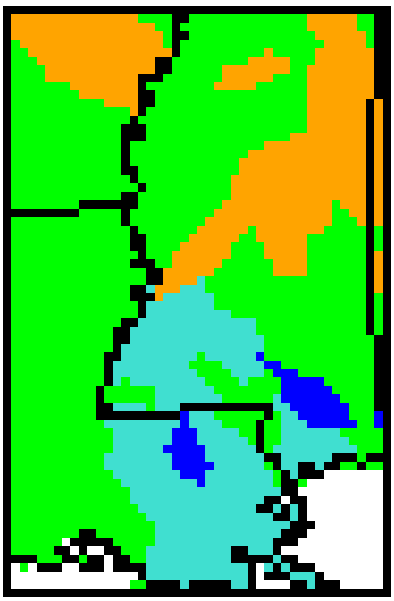
**January 3rd, 2017**

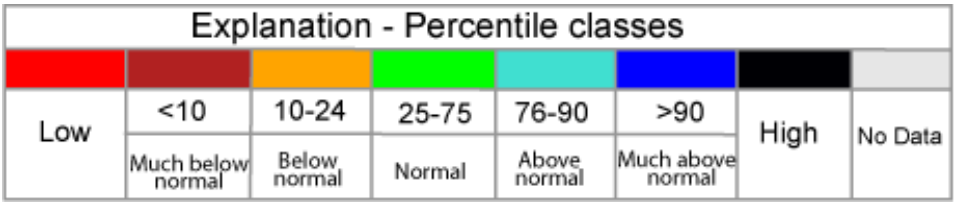


**January 31st, 2017**

**Streamflow:**

The United States Geological Survey's (USGS) January 2017 river streamflow records were compared with all historical January streamflow records. Normal streamflow was observed across much of the Yazoo, Northeast Louisiana, and Southeast Arkansas river basins. Much of the Pascagoula river basin and portions of the Lower Pearl River also had normal stream flow. The Big Black, Upper Pearl, and much of the Tombigbee river systems had below normal streamflow. Above to much above normal streamflow was observed across portions of the Lower Pearl, Black Creek Basin, and the Homochitto River basins.





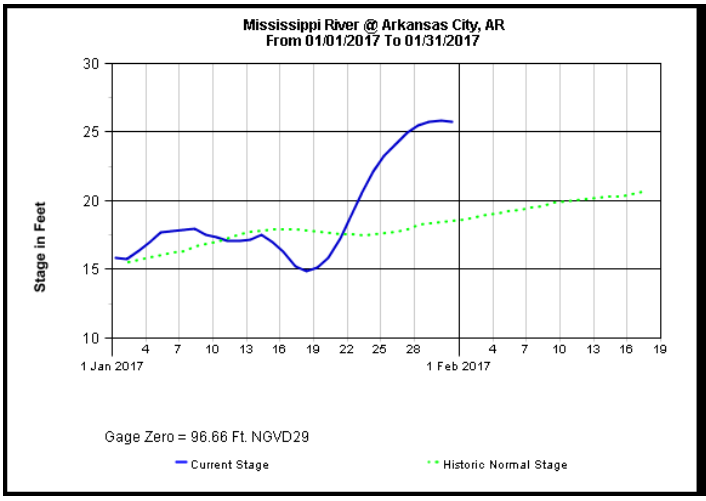
**River Conditions:**
Heavy rainfall during late January produced flooding along Tuscolameta Creek and the Lower Pearl River. Many other rivers experienced minor to moderate rise during this same time period.

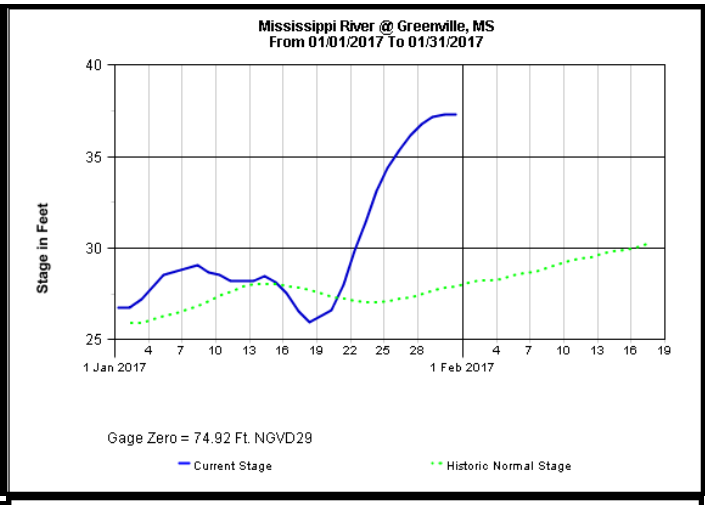
**Climatic Outlook and Flood Potential:**
The climatic outlook shows good chances for above normal temperatures over the next three months for the whole HSA. In regards to precipitation, the outlook indicates that there are equal chances of normal, above normal, or below normal conditions. Thus, based on current soil moisture, streamflow, and the 3-month climate outlook, the flood potentials are thus:

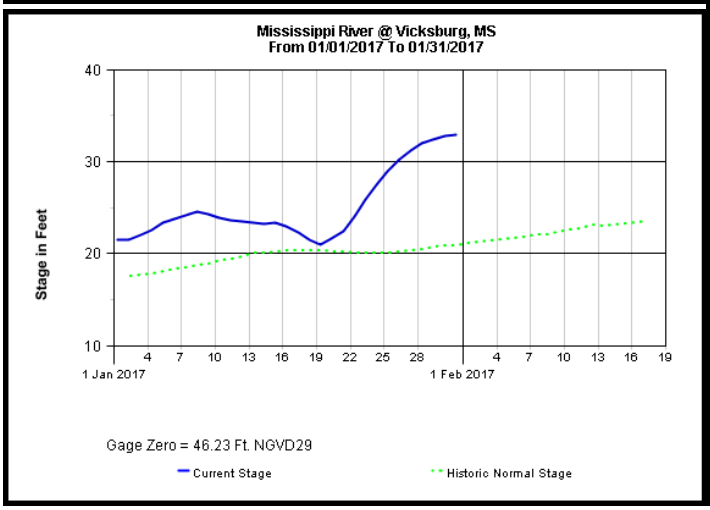
Pearl River System: Below Normal.
Yazoo River System: Below Normal.
Big Black River System: Below Normal.
Homochitto River System: Normal.
Pascagoula River System: Normal.
Northeast LA and Southeast AR: Below Normal.
Tombigbee River System: Below Normal.
Mississippi River: Normal.

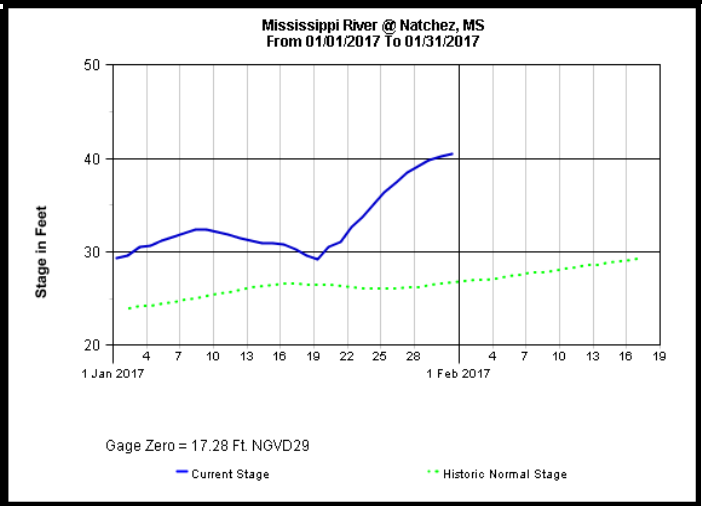
## Mississippi River Plots January 2017
## Plots Courtesy of the United States Army Corps of Engineers

**Monthly Preliminary High and Low Stages:**



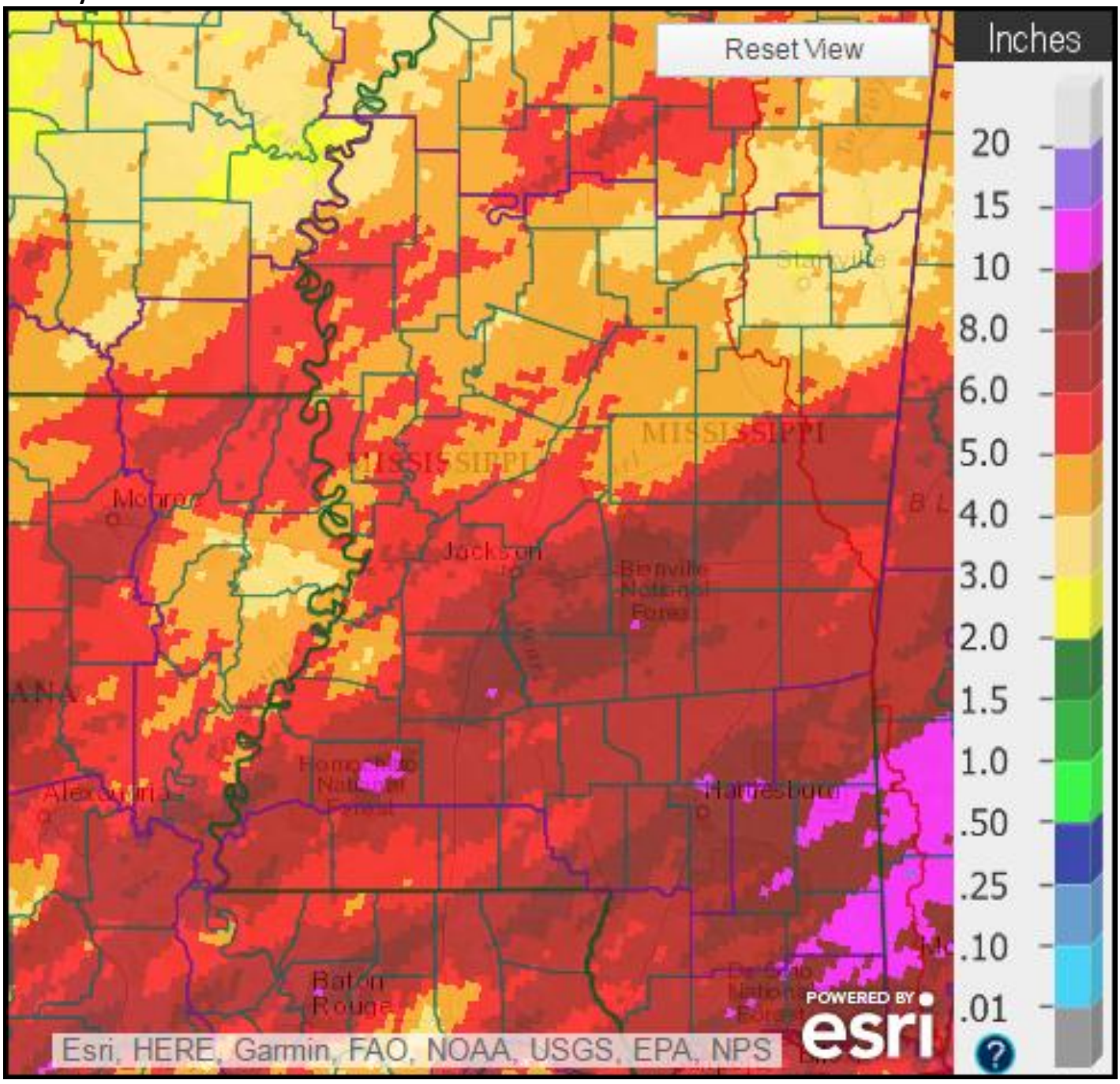



| Location | Flood Stage (ft) | High Stage (ft) | Date | Low Stage (ft) | Date |
|---|---|---|---|---|---|
| **Arkansas City** | **37** | **25.91** | **01/30** | **14.86** | **01/18** |
| **Greenville** | **48** | **37.37** | **01/30** | **25.96** | **01/18** |
| **Vicksburg** | **43** | **33.07** | **01/31** | **20.88** | **01/19** |
| **Natchez** | **48** | **40.63** | **01/31** | **29.10** | **01/19** |

## Rainfall for the Month of January

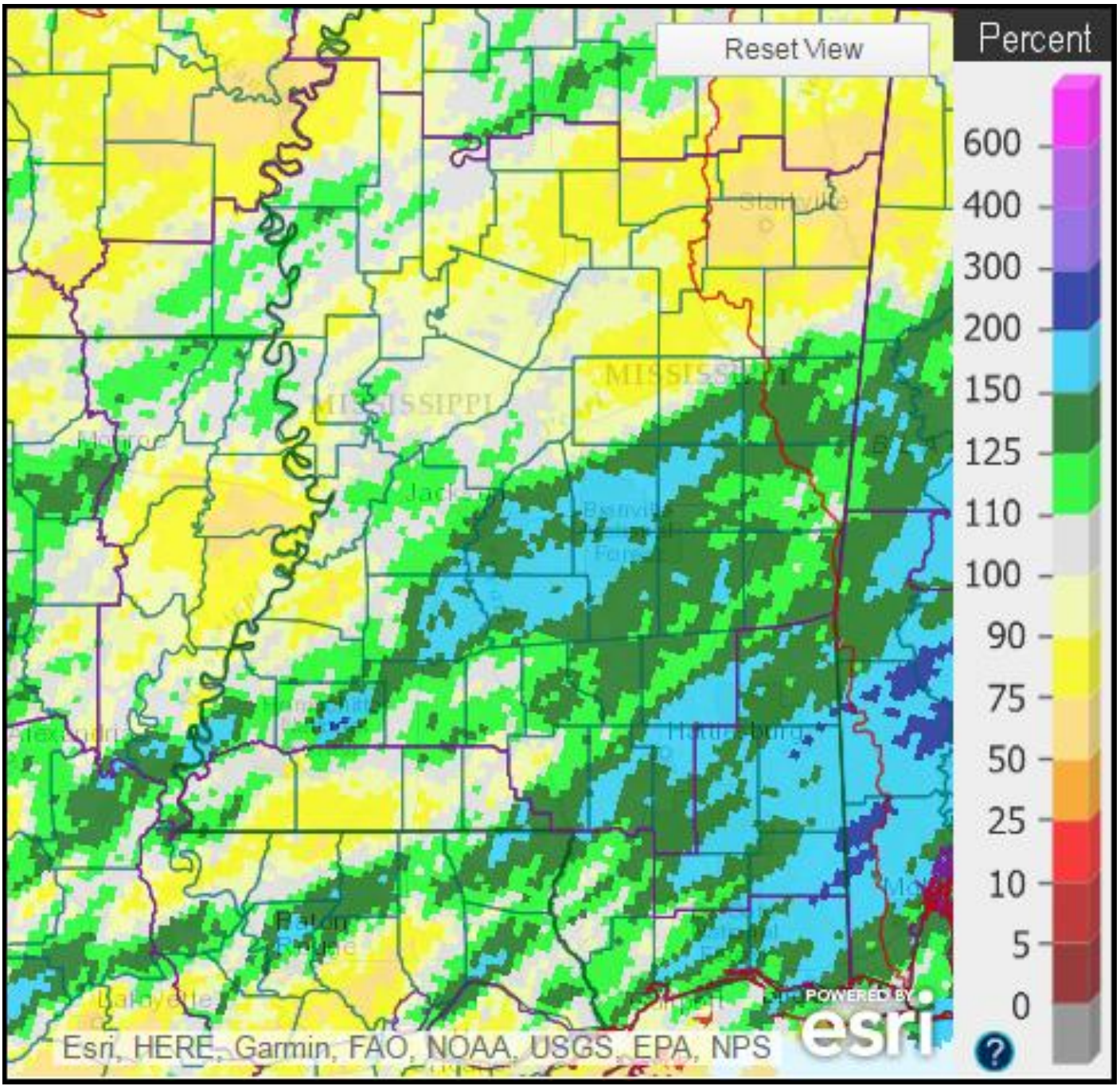
During the period from 7 am December 31st until 7 am January 31st, the largest rainfall amounts from NWS Cooperative Observers were:
13.34 inches at Meadville, MS;  11.93 inches at Raleigh, MS;  11.77 inches at Purvis, MS; 11.09 inches at Hazlehurst, MS; 10.83 inches at Columbia, MS; 10.73 inches at D'lo, MS; 10.57 inches at Meadville 5SSE, MS; 10.32 inches at Hattiesburg, MS; 10.26 inches at Pat Harrison Waterway's Turkey Creek Water Park, MS; 10.15 inches at Union Church, MS; 9.55 inches at Newton, MS; 9.15 inches at Mize, MS; and 9.14 inches at Prentiss, MS;

**January Rainfall Estimates:**




Note: Observer rainfall and MPE in January may differ due to time differences.

**January Percent of Normal Precipitation:**




Note: Observer rainfall and MPE in January may differ due to time differences.

**January Rainfall for Selected Cities:**

| City (Airport) | Rainfall | Departure from Normal | 2017 Rainfall | 2017 Departure from Normal |
|---|---|---|---|---|
| Jackson (KJAN) | 7.90 | 2.93 | 7.90 | +2.93 |
| Meridian (KMEI) | 7.37 | 2.24 | 7.37 | +2.24 |
| Hattiesburg (KHBG) | 9.07 | 3.33 | 9.07 | +3.33 |
| Vicksburg (KTVR) | 4.23 | -0.84 | 4.23 | -0.84 |
| Greenville (KGLH) | 5.11 | 0.14 | 5.11 | +0.14 |
| Greenwood (KGWO) | 4.23 | -0.29 | 4.23 | -0.29 |

Total Flood Warning products issued: 0
Total Flood Statement products issued: 0
Total Flood Advisories MS River: 0
Daily Climate and Ag WX Products (AGO'S) issued: 31
Daily CoCoRaHS Rainfall Products (LCO'S) issued: 31
Daily River and Lake Summary Products (RVD'S) issued: 31

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District